LETTERS TO THE EDITOR

[*The Editor does not hold himself responsible for opinions expressed by his Correspondents. No notice is taken of anonymous communications.*]

Variety and Species.

IN a recent number of NATURE I noticed an extract from a paper read before the Literary and Philosophical Society at Manchester, on the subject of variety as distinguished from species. The author suggests the question, "where does species end, variety begin?" From experiments, he finds that the colours in different parts of the wings of insects treated with, in some cases become toned down to a more sombre hue, in others become mixed with the adjoining colour, and that they are in every case smaller. May not these differences be attributed to the effects of a confined and unnatural life. I myself well recollect rearing a Drinker Moth when a boy at school, and obtaining a small, dull-coloured specimen, instead of an insect whose rich brown wings rival in colour those of the well-known "oak-egger." But difference of colour does not constitute the only variety which is noticed in *Lepidoptera*, for position of markings and proportions of colour are equally worthy of notice, though not so obvious to the unaccustomed eye. Take, for example, the common six-spot Burnet (*Zygæna filipendula*), of which I know three distinct forms—viz. (1), the ordinary one, with three clear spots; (2), having the spots all connected, forming an ill-defined bar of red down the centre of the upper wings; (3), (a form which I believe to be in general very rarely met with, but of which I have myself captured several specimens), having the red markings of (1) supplied by those of a pale yellow, in both upper and under wings. Now, since these were all captured in one field where the three forms are comparatively common, may it not be more than probable that the difference is not to be denominated a variety, but to be a natural dissimilarity of form; not to be attributed to any physical difference of circumstances, previously to the attainment of the state of "imago," but to a purely natural and unassisted cause? A white horse is not considered a variety because his sire was a bay, nor is the whiteness of a bullock considered a *lusus naturæ* if born from tawny parents. I hope to be able to make experiments during the following year, which may perhaps lead to more conclusive results on this subject.

F.

Cuckow's Eggs

I TRUST that, although some time has elapsed since Professor Newton's very able paper on Cuckows' eggs appeared in NATURE, I am not too late to offer a few observations on it, the more so as I have always taken great interest in the breeding of the cuckow. I cannot quite agree with Professor Newton that cuckows' eggs *as a rule* are subject to great variety. The eggs of the Great Spotted Cuckow (*Oxylophus glandarius*) are certainly not subject to much variety; for in a large series from Africa and Spain I have found them closely resemble each other. Of our common cuckow (*Cuculus canorus*) abnormally coloured eggs have several times come under my observation, but I consider them as of very rare occurrence, and in several large series I have seen, but few have struck me as differing much from the usual type.

Of those I possess in my own collection, the most peculiar variety is a large egg, the ground colour of which is a dirty grey, sparingly spotted and blotched with light brown, and somewhat resembling some varieties of the eggs of the Garden Warbler (*Sylvia hortensis*). This egg was found by the late Mr. E. Seidensacher, of Cilli, Styria, in a nest of the creeper (*Certhia familiaris*), with four eggs of the foster-parent, and was sent to prove that the cuckow must have deposited her egg with her bill, as the nest of the creeper was so placed that she could only have got her head in. A German friend of mine, residing near Coblentz, sent me, for inspection, last year, a most peculiar cuckow's egg, which reminds one of that referred to by Salerne. This egg was rather large for that of a cuckow, and of a uniform bluish green colour. He did not, however, state in what nest it had been found.

My own experience in field natural history leads me to confirm the opinion given by Professor Newton, that the same female produces eggs which closely resemble each other; but at the same time I have not found that the same cuckow generally makes use of the same species of bird as nurse for her offspring, and in this I am borne out by several field naturalists with whom I have worked.

My friend at Coblentz wrote to me some time ago, stating that he had observed that the same female cuckow generally produces similarly coloured eggs, and that he had found in a nest of *Turdus merula* a peculiar and abnormally coloured egg of the common cuckow, closely resembling that of the common bunting (*Emberiza miliaria*), and shortly after found in a nest of the Robin (*Sylvia rubecula*), situated close to the blackbird's nest above referred to, another similar cuckow's egg. He further states that the cuckow is not a common bird there, and that he had good reasons for supposing that the two eggs were produced by the same female; also that in 1867 the same thing occurred, when he found peculiarly coloured cuckows' eggs in nests of the Chiffchaff and Willow-wren.

As far as my own experience goes, I cannot testify to the correctness of Dr. Baldamus's theory, as amongst all the cuckows' eggs I have collected, I find scarcely any that resemble those of the foster-parents. I have now before me eggs of our common cuckow taken with the following species, the eggs of which I have with each cuckow's egg, viz.: *Sylvia arundinacea*, *S. rubecula*, *Certhia familiaris*, *Emberiza hortulana*, *Sylvia palustris*, *S. cinerea*, *Motacilla alba*, and *Accentor modularis*, none of which, excepting that found with the eggs of *Sylvia cinerea*, bear any resemblance to the eggs of the foster-parent. The eggs of the American cow bunting (*Molothrus pecoris*) which, like our cuckow, entrusts its offspring to foster-parents, seldom, I believe, resemble those of the foster-parent, and in the instances that have come under my own observation I have found them to differ very widely from the foster-parent's eggs. On the other hand, the eggs of the Great Spotted Cuckow (*Oxylophus glandarius*) are so strikingly similar to those of the common Magpie, in whose nests they are generally placed, that it is often difficult to distinguish them except by handling them, the texture of the shell being very different from that of the magpie's egg. In Spain they are, however, occasionally found in the nests of the Azure-winged Magpie (*Cyanopica Cookii,*) from the eggs of which bird they differ very much.

H. E. DRESSER

Physical Meteorology

IN Mr. Balfour Stewart's suggestions (NATURE, p. 192) he refers, as an illustration of his method, to a frequently falling barometer in the centre of a cyclone while air is rushing in from every side, and asks, "What can carry off the air if there be not an ascending current in the very heat of the cyclone?" I would therefore ask his consideration of the grounds on which, as I believe, such an "ascending current" *must* there take place on the simple principle that great heat has been evolved.

It is well known—(1) That long-continued and heavy rainfall takes place in any area of low pressure with higher pressure outside of it. (2) That the greater part of the rain which falls, during storms, descends in the front part of the atmospheric depression which attends the storm; and (3) That the rainfall is *proportional* to the suddenness and extent of the fall of the barometer. Now, though mere *sequence* does not *prove* a connection as "Cause and Effect," it certainly *suggests* it if the supposed cause be adequate to produce the effect. Let B represent a certain weight, the latent heat of vapour at (10° Cent.) 50° Fahr. is (Reguault 599°.5 Cent.) = 1079° Fahr. But specific heat of air is to that of water as 0.2375 : 1 (Regnault). Consequently B of vapour condensed would heat B of air $\left(\frac{1079^\circ}{0{\cdot}2375}\right)$ 4543° of Fahr.

When a warm and very moist equatorial current meets and intermingles with a cold polar current (from the known laws of vapour) the column of air, thus mixed, must deposit a certain amount of moisture. Let us assume the mixed stream to be about 1,000 feet in thickness, and that $\frac{1}{10}$ of an inch of rain falls suddenly on the surface. 1,000 cubic inches of air weigh about 310 grains, and $\frac{1}{10}$ cubic inch of water about $25\frac{1}{4}$ grains. Consequently, the latent heat of this $\frac{1}{10}$ inch of rain would heat the air of the 1,000 feet column $\left(\frac{4543^\circ \times 25\frac{1}{4}}{310}\right)$ 370° of Fahr. which *must* occasion an enormous ascending current of air, thereby producing a sudden diminution of the pressure at the surface, and causing a large influx of air to restore the equilibrium.

We know that "whirlwinds" arise from "local heating" (as in dust-storms or prairie-fires); hence a like effect must result from such local evolution of heat through the condensation of atmospheric vapour, and the heated column of air will ascend (as a whirlwind in the upper strata) *before* the like effects are

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produced at the surface. In his remarks on the great storm (at Nassau, October 1866), Captain Chatfield observed, "that (during the calm) while the vortex of the storm was passing over the harbour, the atmosphere was most oppressive, and the clouds in the zenith appeared to be revolving rapidly." Under certain modifying circumstances, the same *vera causa* will, I believe, account satisfactorily for the phenomena of "hail-storms," "water-spouts," &c. But I am unwilling to trespass too much on your space.

Glenville, Fermoy HENRY HUDSON, M.D.

A Cyclone in England.

IT is so seldom we get a cyclone so well developed in these latitudes, that I have thought the following observations would interest the readers of NATURE.

Noon.	Barometer,	29.678.	Wind,	S.S.W.	Estimated force,	4
4 P.M.	,,	29.304.	,,	S.W.	,,	9
6 P.M.	,,	29.205.	,,	W.	,,	10
9.40 P.M.	,,	29.342.	,,	W.N.W.	,,	9
11 P.M.	,,	29.391.	,,	N.W.	,,	7

It will be observed the wind began to freshen from the S.S.W. with a falling barometer; it then veered to S.W., W.S.W. to W., the barometer falling the whole time. When the wind arrived at W. the storm was at its height and the barometer a minimum. The wind then veered W. by N., W.N.W. to N.W., gradually becoming less violent, and the barometer rose during that time. The storm lasted about twelve or fourteen hours.

From the above, I deduce that Plymouth must have been in the southern half of the cyclone which travelled eastward; hence, probably, more damage must have been done further north than here.

I should feel obliged by any reader of NATURE living in the North or East of England, giving the results of his observations during the storm. F.R.A.S.

Plymouth, 17th December, 1869.

Lectures to Ladies

I HAVE only just seen the letter in NATURE, signed "M.A.B.," on the subject of the hour chosen for lectures to ladies. I most sincerely hope that the morning hour will be continued. It is certainly to be regretted if this arrangement is inconvenient to ladies engaged in teaching; but to the far larger number who are not so engaged, any other hour would be prohibitory.

In addition to the constant inconvenience entailed on ladies by the necessity (or supposed necessity) of their being "fetched and carried" every time they go out after dark, all ladies living ordinary lives in quiet homes, know very well that it behoves them to get their "occupations" done in the day-time, and that if they began attending courses of lectures in the evening, their fathers, husbands, and brothers would be apt to raise a pretty forcible outcry against the advance of female education.

If I might venture to make a suggestion, it would be that South Kensington is a very long way from everywhere else, and that a more central situation would add very much to the convenience of those who come from a distance. I am sure that no one who attended Professor Huxley's course of lectures just concluded, begrudged the time and trouble it cost them to get there, or thought it anything but well bestowed; at the same time a shorter and more manageable expedition would be a great boon to many. M. T. G.

NOTES

THE Gold Medal of the Royal Astronomical Society has, we are informed, been this year awarded to M. Delaunay, one of the greatest of living mathematicians and astronomers, for his many important investigations. We are sure that English astronomers will hail this award with the liveliest satisfaction.

THE question of Meteorological Standards is, we learn, now occupying the attention of the Royal Society Council. We may hope, therefore, that the revision which has so long been needed will now take place.

THE Lecturers named for the Friday Evening Meetings at the Royal Institution, before Easter, are Prof. Tyndall, F.R.S., Prof. Odling, F.R.S., Prof. Ruskin, Dr. W. B. Carpenter, F.R.S., Mr. W. K. Clifford, Colonel Sir Henry James, F.R.S., Mr. E. J. Reed, C.B., Chief Constructor of the Navy, Prof. Sylvester, F.R.S., Mr. P. W. Barlow, F.R.S., Prof. Rolleston, F.R.S., Prof. Roscoe, F.R.S., and Prof. Huxley, F.R.S. Prof. Tyndall's discourse will be on "Haze and Dust," and will probably be delivered on the 21st of January. Dr. Odling proposes to lecture on "Prof. Graham's Scientific Work;" Dr. Carpenter on "Temperature and Life in the Deep Sea," and Prof. Sylvester on "Chance."

THE Keith Prize of the Royal Society of Edinburgh was awarded on Monday to Professor Tait, for his paper on the rotation of a rigid body about a fixed point.

THE Professorship of Botany in the Royal College of Science, Dublin, is now vacant, Professor Wyville Thomson's resignation having been accepted by the Science and Art Department.

THE following lectures will be given in the course of the present session of the Chemical Society:—On Vanadium, by Dr. Roscoe; on Refraction Equivalents, by Dr. Gladstone; and on the Platinic Ammoniums, by Dr. Odling.

THE subscriptions to the Faraday Monument Fund, received up to Dec. 7, amount to £1,400. The object of the fund is to provide a public memorial to Faraday, and the subscription from one person is not to exceed five guineas.

PROFESSOR CARL VOGT, of Vienna, is actively engaged in the formation of an Anthropological Society for Austria.

DR. S. COULL MACKENZIE has been appointed to the professorship of Hygiene in the Calcutta Medical College.

IN a new quarterly journal devoted to public hygiene, and produced at Brunswick, in Germany, we find a carefully-written article upon English institutions for hygiene, and English factories. There are also contributions upon army hygiene, barrack reform, and drainage. The journal is edited by Prof. Riclam, of Leipzig.

THE Argenteuil Prize has been awarded by the Academy of Medicine of Paris in the following way:—To Mr. Corradi, of Florence, 5,000 francs; to MM. Mallez and Tripier, 2,000 francs; to M. Reliquet, 1,000 francs.

THE General Secretary of the Academy of Vienna has published as a *tirage apart* from the almanack of the Academy, a biographical sketch of Karl Ludwig Freiherr von Reichenbach, who, after a long and distinguished scientific career, died in January last at the advanced age of eighty-one. Dr. Schrotter divides the period of Reichenbach's scientific activity into three parts: the first, that of practical work and exact research, during which he enriched mankind by the discovery of paraffin and creosote; the second, that which he devoted to the study of meteorites, a study in which his enthusiastic mind led him beyond the boundary of accurate science; and, lastly, the time when he gave himself up to the investigation of so-called animal magnetism and the imaginary odic force by which he sought to explain the phenomena he thought he had discovered. Dr. Schrötter rightly concludes, that however far astray Reichenbach may have been led by his odic notions, he earned for himself an honourable place in science, his very errors being those of a highly-gifted man.

WE have received the first part of the volume recording the scientific results of the travels of Baron Claus von der Decken in East Africa, during the years 1857–1865. The materials have been worked up by Peters, Cabanis, Hilgendorf, Ed. von Martens, and Semper, and comprise Mammalia, Birds, Amphibia, Crustacea, Mollusca, and Echinodermata. The part before us is illustrated by thirty-five lithographic plates of great beauty, most of them being carefully and delicately coloured. The second part, which is to contain the Insects and Spiders, has been entrusted to Gerstäcker.

DR. OLDHAM, the president, has communicated to the Proceedings of the Asiatic Society of Bengal some interesting notes on remains found in a Cromlech at Coorg. This Cromlech was

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